

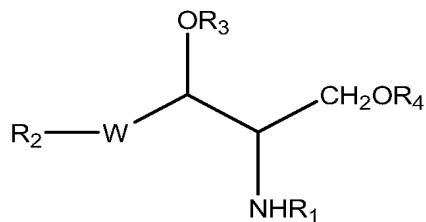
**Amendments to the Claims:**

This listing of the claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-29 (Cancelled).

30 (Currently Amended). A compound of formula (I):



wherein

**R<sub>1</sub>** represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group -C(O)R<sub>5</sub>;

**R<sub>2</sub>** and **R<sub>5</sub>** represent, independently, a branched or linear C<sub>10</sub>-C<sub>24</sub> alkyl, alkenyl or polyenyl ~~group~~group;

**R<sub>3</sub>** and **R<sub>4</sub>** are, independently, a group -C(O)-NR<sub>6</sub>R<sub>7</sub>, in which **R<sub>6</sub>** and **R<sub>7</sub>**, being the same or different for R<sub>3</sub> and R<sub>4</sub>, and represent, independently, a hydrogen, or a saturated or unsaturated branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or **R<sub>3</sub>** is a hydrogen; or **R<sub>3</sub>** and **R<sub>4</sub>** form, together with the oxygen atoms to which they are bound, a heterocyclic ring comprising -C(O)-NR<sub>9</sub>-[R<sub>8</sub>-NR<sub>9</sub>]<sub>m</sub>-C(O)-, in which **R<sub>8</sub>** represents a

saturated or unsaturated C<sub>1</sub>-C<sub>4</sub> alkyl and **R<sub>9</sub>** represents a hydrogen or a polyalkylamine of the formula -[R<sub>8</sub>-NR<sub>9</sub>]<sub>n</sub>-, wherein said R<sub>9</sub> or each alkylamine unit R<sub>8</sub>NR<sub>9</sub> may be the same or different in said polyalkylamine; and **n** and **m**, represent, independently, an integer from 1 to 10; and

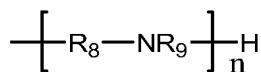
**W** represents a group selected from -CH=CH-, -CH<sub>2</sub>-CH(OH)- or -CH<sub>2</sub>-CH<sub>2</sub>-.

31 (Previously Presented). The compound of Claim 30, wherein R<sub>1</sub> represents a -C(O)R<sub>5</sub> group, R<sub>5</sub> being as defined.

32 (Currently Amended). The compound of Claim 30, wherein said R<sub>2</sub> and R<sub>5</sub> represent, independently, a linear or branched C<sub>12</sub>-C<sub>18</sub> alkyl or alkenyl group.

33 (Previously Presented). The compound of Claim 30, wherein W represents -CH=CH-.

34 (Currently Amended). The compound of Claim 30, wherein **R<sub>1</sub>** represents a -C(O)R<sub>5</sub> group; **R<sub>5</sub>** represents a C<sub>12</sub>-C<sub>18</sub> linear or branched alkyl or alkenyl; **W** represents -CH=CH-; **R<sub>2</sub>** represents a C<sub>12</sub>-C<sub>18</sub> linear or branched alkyl or alkenyl; **R<sub>4</sub>-R<sub>3</sub>** and **R<sub>4</sub>** represent, independently, a group -C(O)-NR<sub>6</sub>R<sub>7</sub>, and **R<sub>3</sub>** may also represent a hydrogen, wherein **R<sub>6</sub>** and **R<sub>7</sub>** represent, independently, a hydrogen or a polyalkylamine having the general formula (II):



wherein

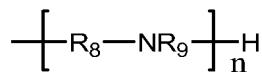
**R<sub>8</sub>** represent a C<sub>1</sub>-C<sub>4</sub> alkyl;

**R<sub>9</sub>** represents a hydrogen or a polyalkylamine branch of formula (II), said R<sub>8</sub> and R<sub>9</sub> may be the same or different for each alkylamine unit, -R<sub>8</sub>NR<sub>9</sub>-, in the polyalkylamine of formula (II); and

**n** represents an integer from 3 to 6.

35 (Previously Presented). The compound of Claim 34, wherein R<sub>3</sub> is a hydrogen atom.

36 (Currently Amended). The compound of Claim 30, wherein **R<sub>1</sub>** represents a -C(O)R<sub>5</sub> group; **R<sub>5</sub>** represents a C<sub>12</sub>- C<sub>18</sub> linear or branched alkyl or alkenyl; **W** represents -CH=CH-; **R<sub>2</sub>** represents a C<sub>12</sub>- C<sub>18</sub> linear or branched alkyl or alkenyl; **R<sub>3</sub>** and **R<sub>4</sub>** represent, independently, a group -C(O)-NR<sub>6</sub>R<sub>7</sub>, wherein **R<sub>6</sub>** and **R<sub>7</sub>** represent, independently, an alkylamine or a polyalkylamine having the general formula (II):



wherein

**R<sub>8</sub>** represents a C<sub>1</sub>-C<sub>4</sub> alkyl;

**R<sub>9</sub>** represents a hydrogen or a polyalkylamine branch of formula (II), said R<sub>8</sub> and R<sub>9</sub> may be the same or different for each alkylamine unit, -R<sub>8</sub>NR<sub>9</sub>-, in the polyalkylamine of formula (II); and

**n** represents an integer from 3 to 6.

37 (Currently Amended). The compound of Claim 30, wherein **R<sub>1</sub>** represents a  $\text{C}(\text{O})\text{R}_5$  group;  $\text{R}_5$  represents a  $\text{C}_{12}\text{--C}_{18}$  linear or branched alkyl or alkenyl; **W** represents  $-\text{CH}=\text{CH}-$ ; **R<sub>2</sub>** represents a  $\text{C}_{12}\text{--C}_{18}$  linear or branched alkyl or alkenyl; **R<sub>3</sub>** and **R<sub>4</sub>** form, together with the oxygen atoms to which they are bonded, a heterocyclic ring comprising  $-\text{C}(\text{O})-\text{[NH--R}_8\text{]}_n-\text{NH--C}(\text{O})-$ ,

wherein

**R<sub>8</sub>** represents a  $\text{C}_1\text{--C}_4$  alkyl, wherein for each alkylamine unit having the formula  $-\text{NH--R}_8-$ , said  $\text{R}_8$  may be the same or different; and

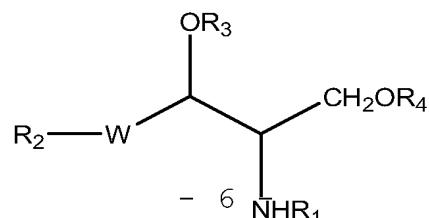
**n** represents an integer from 3 to 6.

38 (Previously Presented). The compound of Claim 30, wherein said  $\text{R}_8$  is a  $\text{C}_3\text{--C}_4$  alkyl.

39 (Previously Presented). The compound of Claim 30, being N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

40 (Cancelled).

41 (Currently Amended). A process for the preparation of a sphingoid-polyalkylamine conjugate of formula (I)



wherein

**R<sub>1</sub>** represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group  $-C(O)R_5$ ;

**R<sub>2</sub>** and **R<sub>5</sub>** represent, independently, a branched or linear  $C_{10}-C_{24}$  alkyl, alkenyl or polyenyl ~~group~~group;

**R<sub>3</sub>** and **R<sub>4</sub>** are, independently, a group  $-C(O)-NR_6R_7$ , in which **R<sub>6</sub>** and **R<sub>7</sub>** being the same or different for **R<sub>3</sub>** and **R<sub>4</sub>**, and represent, independently, a hydrogen, or a saturated or unsaturated branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or

**R<sub>3</sub>** represents a hydrogen; or

**R<sub>3</sub>** and **R<sub>4</sub>** form together with the oxygen atoms to which they are bound a heterocyclic ring comprising  $-C(O)-NR_9-[R_8-$   
 $NR_9]_m-C(O)-$ , in which **R<sub>8</sub>** represents a saturated or unsaturated  $C_1-C_4$  alkyl and **R<sub>9</sub>** represents a hydrogen or a polyalkylamine of the formula  $-[R_8-NR_9]_n-$ , wherein said **R<sub>9</sub>** or each alkylamine unit  $R_8NR_9$  may be the same or different in said polyalkylamine; and **n** and **m** represent, independently, an integer from 1 to 10; and

**W** represents a group selected from  $-CH=CH-$ ,  $-CH_2-$   
 $CH(OH)-$  or  $-CH_2-CH_2-$ ;

the process ~~comprises~~comprising:

(a) providing a sphingoid compound of formula (I) wherein R<sub>1</sub>, R<sub>2</sub> and W have the meaning as defined above and R<sub>3</sub> and R<sub>4</sub> represent, independently, a hydrogen atom or an oxo protecting group, wherein at least one of said R<sub>3</sub> and R<sub>4</sub> represent a hydrogen atom;

(b) reacting said compound of step (a) with an activating agent for activating the hydroxyl moieties of OR<sub>3</sub> and/or OR<sub>4</sub>, optionally in the presence of a catalyst, to obtain an activated OR<sub>3</sub> and/or OR<sub>4</sub> group;

(c) reacting said activated sphingoid compound with a polyalkylamine; and

(d) removing said protecting group, thereby obtaining said sphingoid-polyalkylamine conjugate of formula (I) as defined above.

42 (Previously Presented). The process of Claim 41, wherein said sphingoid-polyalkylamine conjugate is N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

43 (Currently Amended). The process of Claim 41, wherein said protecting group is a primary amine protecting group selected from the group consisting of trifluoroacetamide, fmoc, carbobenzoxy (CBZ), and dialkyl phosphoramidates phosphoramidates.

44 (Currently Amended). The process of Claim 41, wherein said activating agent is selected from N,N'-

disuccinimidylcarbonate, di- or tri-phosgene or an imidazole derivative.

45 (Currently Amended). The process of Claim 41, wherein said activation is performed in the presence of a catalyst, the catalyst being ~~selected from~~ 4-dimethylamino pyridine (DMAP), tetrazole, dicyanoimidazole or diisopropylethylamine.

46 (Previously Presented). The process of Claim 41, for obtaining a di-substituted sphingoid-polyalkylamine conjugate, wherein

in step (a) both  $R_3$  and  $R_4$  are hydrogen atoms, and said process comprises reacting the compound of formula (I) with at least two equivalents of polyalkylamine to obtain a disubstituted sphingoid-polyalkylamine conjugate, with identical polyalkylamine substituents.

47 (Currently Amended). The process of Claim 41, for obtaining a di-substituted sphingoid-polyalkylamine conjugate, wherein

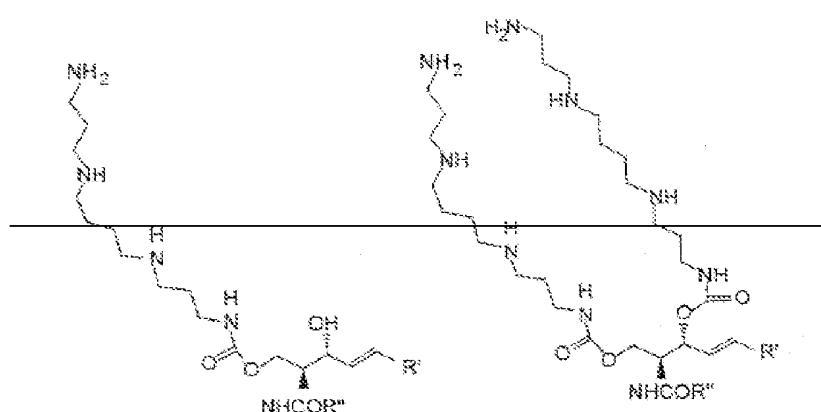
in step (a) at least one of  $R_3$  or  $R_4$  is protected with a protecting group, the process comprises reacting in step (c) the activated sphingoid compound with a first polyalkylamine; removing the protecting group of  $R_3$  or  $R_4$  to obtain an unprotected oxo group; reacting the unprotected compound with an activating agent to obtain an activated mono-substituted

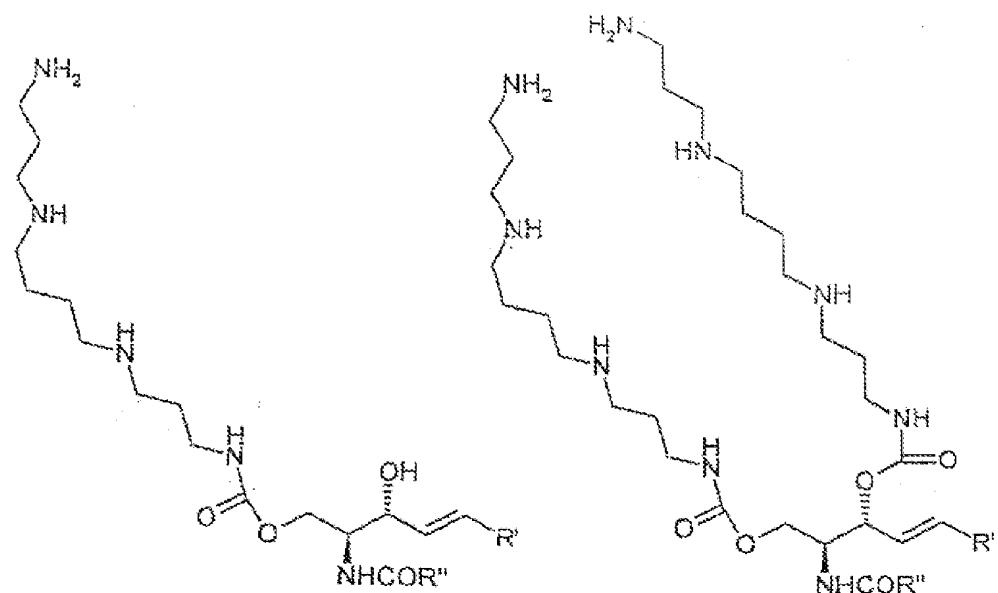
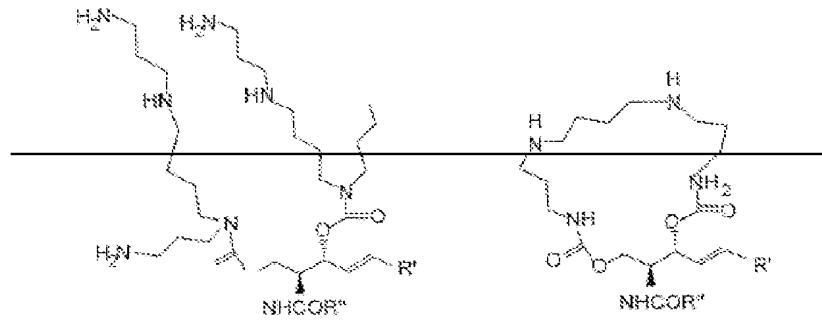
sphingoid-polyalkylamine conjugate; and reacting said activated mono-substituted sphingoid-polyalkylamine conjugate with a second polyalkylamine, thereby obtaining a di-substituted sphingoid-polyalkylamine conjugate, in which said first and second polyalkylamine may be the same or different.

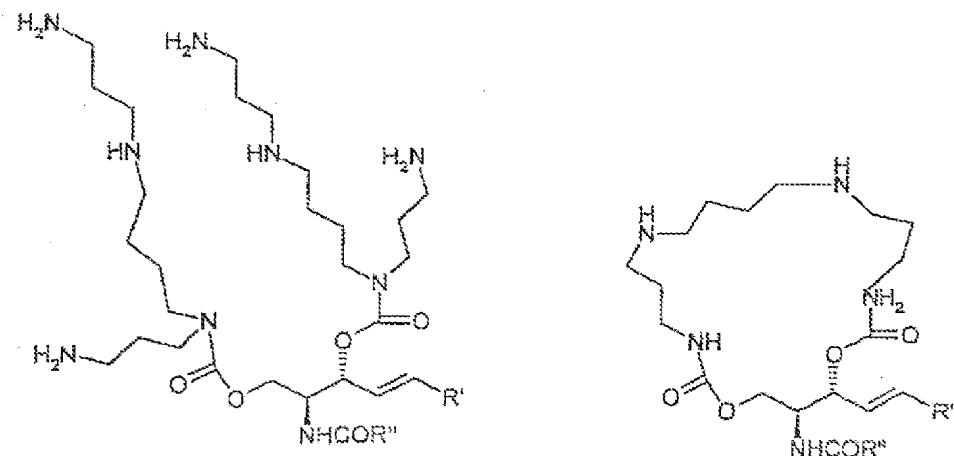
48 (Previously Presented). The process of Claim 41, for obtaining a heterocyclic sphingoid-polyalkylamine conjugate, wherein

in step (a) both  $R_3$  and  $R_4$  are hydrogen atoms, said sphingoid compound is reacted with at least two equivalents of an activating agent to obtain an activated sphingoid with both  $R_3$  and  $R_4$  activated and reacting said activated sphingoid compound with less than an equivalent of polyalkylamine, thereby obtaining a heterocyclic sphingoid-polyalkylamine conjugate.

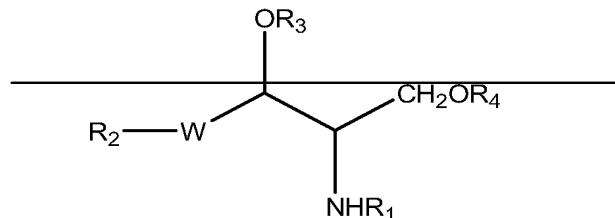
49 (Currently Amended). The process of Claim 41, for obtaining any one of the sphingoid-polyalkylamine conjugates as follows:







50 (Withdrawn-Currently Amended). A composition comprising a sphingoid-polyalkylamine conjugate in accordance with claim 20, and a pharmaceutically acceptable carrier of the formula (I):



wherein

~~R4 represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group C(O)R5;~~

~~R2 and R5 represent, independently, a branched or linear C10-C24 alkyl, alkenyl or polyenyl groups;~~

~~R3 and R4 are independently a group C(O)NR6R7, R6 and R7 being the same or different for R3 and R4 and represent, independently, a hydrogen, or a saturated or unsaturated~~

~~branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or~~

~~R<sub>3</sub> is a hydrogen; or~~

~~R<sub>3</sub> and R<sub>4</sub> form together with the oxygen atoms to which they are bound a heterocyclic ring comprising C(O)NR<sub>4</sub>—[R<sub>2</sub>—NR<sub>9</sub>]<sub>m</sub>—C(O), R<sub>8</sub> represents a saturated or unsaturated C<sub>4</sub>—C<sub>4</sub> alkyl and R<sub>9</sub> represents a hydrogen or a polyalkylamine of the formula —[R<sub>8</sub>—NR<sub>9</sub>]<sub>n</sub>—, wherein said R<sub>9</sub> or each alkylamine unit R<sub>8</sub>NR<sub>9</sub> may be the same or different in said polyalkylamine; an~~

~~n and m are independently an integer from 1 to 10;~~

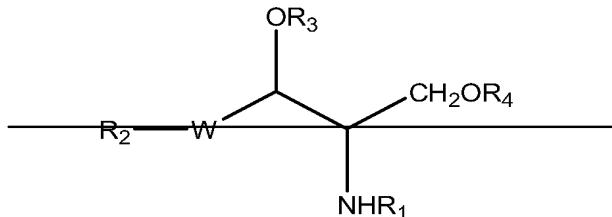
~~W represents a group selected from —CH=CH—, —CH<sub>2</sub>—CH(OH)— or —CH<sub>2</sub>—CH<sub>2</sub>—.~~

51 (Cancelled).

52 (Withdrawn). The composition of Claim 50, wherein said sphingoid-polyalkylamine conjugate is N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

53 (Withdrawn). The composition of Claim 50, further comprising a biologically active molecule.

54 (Withdrawn-Currently Amended). In the method of capturing a molecule having a negative charge, a negative dipole or a local negative dipole with a conjugate capable of capturing said molecule by electrostatic interaction, the improvement wherein said conjugate is a compound in accordance with claim 30 of formula (I):



wherein

~~R<sub>1</sub> represents a hydrogen, a branched or linear alkyl, aryl, alkylamine, or a group C(O)R<sub>5</sub>;~~

~~R<sub>2</sub> and R<sub>5</sub> represent, independently, a branched or linear C<sub>10</sub>-C<sub>24</sub> alkyl, alkenyl or polyenyl groups;~~

~~R<sub>3</sub> and R<sub>4</sub> are independently a group C(O)NR<sub>6</sub>R<sub>7</sub>, R<sub>6</sub> and R<sub>7</sub> being the same or different for R<sub>3</sub> and R<sub>4</sub> and represent, independently, a hydrogen, or a saturated or unsaturated branched or linear polyalkylamine, wherein one or more amine units in said polyalkylamine may be a quaternary ammonium; or~~

~~R<sub>3</sub> is a hydrogen; or~~

~~R<sub>3</sub> and R<sub>4</sub> form together with the oxygen atoms to which they are bound a heterocyclic ring comprising C(O)NR<sub>6</sub>[R<sub>8</sub>NR<sub>9</sub>]<sub>m</sub>C(O), R<sub>8</sub> represents a saturated or unsaturated C<sub>1</sub>-C<sub>4</sub> alkyl and R<sub>9</sub> represents a hydrogen or a polyalkylamine of the formula [R<sub>8</sub>NR<sub>9</sub>]<sub>n</sub>, wherein said R<sub>9</sub> or each alkylamine unit R<sub>8</sub>NR<sub>9</sub> may be the same or different in said polyalkylamine; and n and m are independently an integer from 1 to 10;~~

~~W represents a group selected from CH=CH, CH<sub>2</sub>-CH(OH)- or CH<sub>2</sub>-CH<sub>2</sub>-.~~

55 (Withdrawn). The method of Claim 54, wherein said compound is N-palmitoyl D-erythro sphingosyl-1-carbamoyl spermine.

56-58 (Cancelled)

59 (Previously Presented). The compound of Claim 34, wherein  $R_3$  and  $R_4$  represent the same or different polyalkylamine.